

cured by Messrs. Theobald Brothers, Mysore, and not by Van Ingen & Van Ingen, Mysore.

Enclosed herewith a true copy of the Taxidermist's Certificate which I possess.

PALACE,
KIHILCHIPUR,
CENTRAL INDIA.

YASHODHAR SINGH.

May 22, 1940.

[In Rowland Wards Records of Big Game there is a record of a panther measuring 8' 6" before skinning (9' 3" dressed). It was shot at Banipur Kashmir by Col. A. G. Arbuthnot. Eds.]

III.—THE SHORT-NOSED FRUIT-BAT (*CYNOPTERUS SPHINX*) AS AN AGENT OF SEED DISPERSAL IN THE WILD DATE (*PHOENIX SYLVESTRIS* L.).

Standing in my garden at dusk on the 8th August (1940), I noticed a constant stream of bats flying in and out of the crown of a date palm (*Phoenix sylvestris*). The palm was laden with ripening fruit. At first I took the bats to be the Fulvous Fruit-Bat (*Rousettus leschenaulti* Desm.), but the flight did not seem to be that of *Rousettus*. Being interested, I got my torch and net and took my stand under the tree. In the fading light the crown of the palm was silhouetted against the sky and the bats could be clearly seen coming in, ferreting among the dates and then flying off. In the beam from the torch the colour of the animals soon betrayed their identity, they were the short-nosed Fruit-Bat (*Cynopterus sphinx*). Though dazzled, the bat did not seem to mind the light much. It made alighting difficult and in most cases the bats flew off again, but when the light was turned on once they had settled, they did not worry about it much. They would hurriedly select the ripest dates and fly off with one in the mouth. At no time did any of them finish its meal on the spot. I soon caught some on the return flight to the tree. An examination of the mouth revealed pieces of the scanty pulp of this date, adhering to the teeth. The stomachs contained much liquid and just traces of well-masticated pulp. From this it seems that this bat, like the Flying-Fox and *Rousettus*, relies mainly on juice and not on pulp.

By carrying off the fruit to be eaten elsewhere and there dropping the seeds when done with, the bats unconsciously become agents of seed dispersal. Bats are not unknown as agents of seed dispersal; and ¹Ridley in his book quotes several instances, though

¹ *The Dispersal of Plants throughout the world*, p. 349.

he does not specifically mention *Cynopterus* as an agent of the date palm (*P. sylvestris*). However, he states that in Africa, where the genus *Cynopterus* is absent, *Rousettus* is known to feed on dates and disperse the seeds. While feeding the bats made no noises.

A point worth noting is that the genitals were in non-breeding condition at this season. The testes were invisible externally indicating that they 'atrophy' after breeding just as in *Rousettus*. Among the adults were a number of young adults which did not appear to exhibit the characteristic ferruginous tints of their elders. This seems to show that this bat, like *Rousettus*, breeds earlier in the year, perhaps about the same time as the latter species.

BOMBAY NATURAL HISTORY SOCIETY,

C. McCANN,

August 10, 1940.

IV.—JUNGLE AND HOUSE CROWS AS DESTROYERS OF GAME.

This year, in the beginning of April, I noticed house crows arriving in the town of Bhavanagar in increasing numbers. Trees in which ten and twenty crows used to roost, now held at least a hundred if not more. The numbers in which they arrived was striking, reminding one of travelling parties of pilgrims. This preponderance of crows was also noticed in several large villages in the State. The increase may have been due to the famine prevailing in parts of Kathiawar, and to the scarcity of water in those districts. Here we have been fortunate this year in having good rains, but the crows have left no peace for breeding partridges and other birds.

The Jungle Crow, especially, has been a great menace to partridges, destroying their chicks. During this summer, I saw not less than half a dozen partridges robbed of their young. April and May seem to be the breeding season of the Jungle Crow here, and hence during this period the parent birds become fearless, attacking young birds, squirrels, and any living thing which they can tackle. It was a pathetic sight to see a pair of jungle crows destroying tiny partridge chicks despite the parents' vain attempts to protect them. Other small birds fared as badly. The Jungle Crow levies a heavy annual toll on young partridges. I am sure most nesting birds shudder at the call of the crow, which is a prolonged *qwaau qwaau*, generally emitted with outspread wings. Interpreted it must mean a general invitation to the robber band 'Food is here come and help yourselves'.

The House Crow does useful work as a scavenger. I have constantly observed parties of crows leave in the early mornings to visit villages ten or twelve miles away, specially to feed on dead cattle. They return to their roosts late in the evenings with full crops; but as avid destroyers of young birds and their eggs they are great criminals. And their depredations were particularly